

Replacement of Spring Avenue Bridge over the Poesten Kill

P.I.N. 1756.37/B.J.N 2-20237-0

March 22, 2012 6:00 PM

City of Troy
Rensselaer County



City of Troy
Engineering
Department



New York State
Department of
Transportation



Federal Highway
Administration



Greenman-Pedersen,
Inc.

Replacement of Spring Avenue Bridge over the Poesten Kill

CITY OF TROY:



Mayor Lou Rosamilia
Russ Reeves, P.E.
Barbara Tozzi

CONSULTANT:



Fred Mastroianni, P.E.
John Simkulet, P.E.
Chris Cornwell, P.E.
Jim Rivers

Special Thanks to the Troy Public Library
for use of this meeting room

Replacement of Spring Avenue Bridge over the Poesten Kill

AGENDA

- Presentation of the Project
- Address questions or comments
- Close the formal portion of the meeting
- Representatives from the City/Consultant will remain to answer individual questions or comments
- Written comments to be submitted on comment form and forwarded to the City, GPI OR e-mailed:
ccornwell@gpinet.com

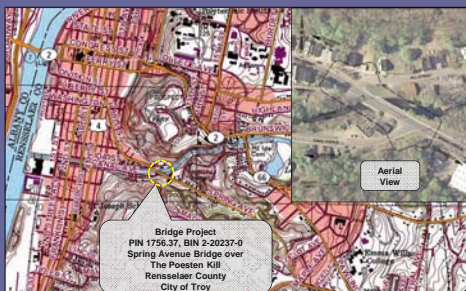
Replacement of Spring Avenue Bridge over the Poesten Kill

PURPOSE OF THIS MEETING

- Present Project Objectives
- Discuss Bridge History and Existing Conditions
- Present Preliminary Design of Alternatives
- Discuss Future Project Action
- Discuss Project Schedule
- Obtain Public Input

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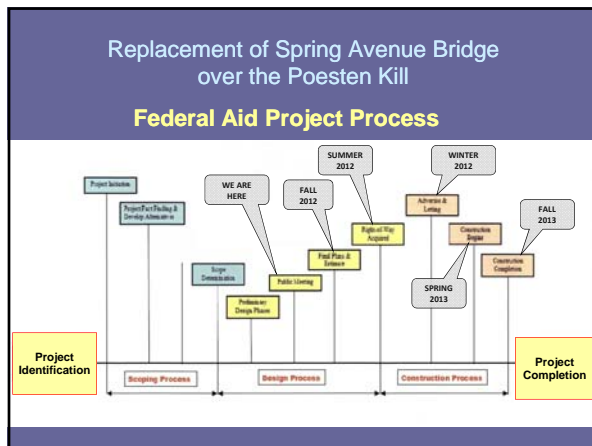
PROJECT LOCATION



Replacement of Spring Avenue Bridge over the Poesten Kill

PRIMARY PROJECT OBJECTIVES

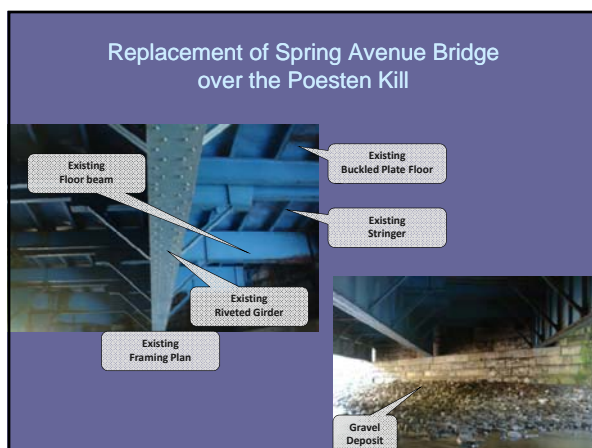
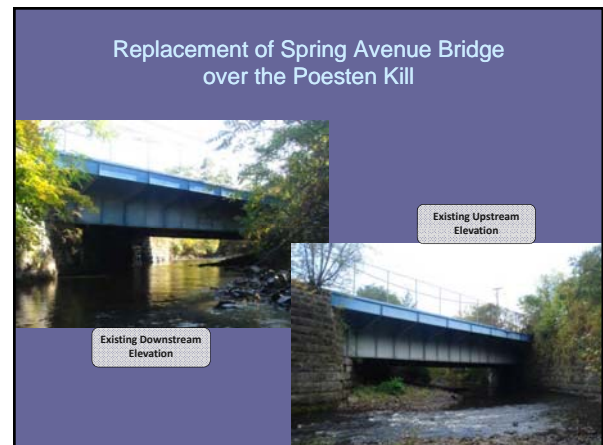
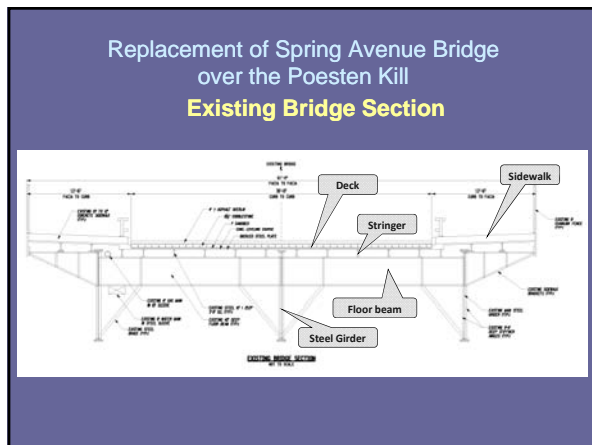
- Replacement of the structurally deficient bridge with a new structure that will provide a minimum service life of 75 years.
- Eliminate or improve non-standard conditions in the safest and most economical method.
- Accommodate pedestrian access that complies with ADA Accessibility Guidelines within the project limits
- Accommodate bicycle access within the project limits
- Address localized drainage and hydraulic capacity along with erosion and scour concerns.



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Bridge History

- Originally constructed in 1895 (117 years old).
- Consists of a built up (3) girder structure 105' in length along a 53 degree skew.
- Last major rehabilitation performed in 1984.
- State Inspection General Recommendation of 3 (1 to 7 scale).
- Significant superstructure and substructure deterioration.
- Hydraulic and Scour issues during peak flow of the Poesten Kill.
- Numerous yellow and red flags.





Replacement of Spring Avenue Bridge over the Poesten Kill

Existing Conditions

- Right-of-Way (ROW) generally 60' wide
- Speed Limit posted @ 30 mph; 85% Speed @ 37 mph (Radar Study)
- Travel Lanes typically 14'-0" wide
- Shoulders typically 4'-0" wide
- Maximum Grade is 3.40%
- Minimum Curve Radius is 2,000 ft
- Poor approach drainage.
- Less than desirable hydraulic opening partially resulting in observed channel scour.

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Existing Conditions

- Existing AADT (Two-way) = 4,706 (2011)
- Project Traffic Volumes for Design year of 2043 (ETC+30) = 5520 @ 0.5 annual growth/year compounded
- Accident History
 - City confirmed no traffic accident within last (3) years
 - Conditions contributed to roadway geometry or conditions
- Area speed limits controlled by urban constraints. All side streets to Spring Avenue are stop controlled.

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DESIGN CONSIDERATIONS

- A. **Design Standards**
 - NYSDOT Bridge Design Manual
 - NYSDOT Highway Design Manual
- B. **Design Criteria**
 - Functional Class = Urban Collector
 - Design speed = 40 mph
 - Lane widths = 14'-0" (Asphalt)
 - Shoulder widths = 5'-0" (Asphalt) (Accommodate Bicyclists)
 - Grade = 3.62% maximum
 - Horizontal curvature = 2,000' minimum
 - Sidewalks = 5'-0" on both sides
 - Superelevation = 2% & Varies
 - Hydraulic Opening = 2'-0" freeboard for 50 year event and pass 100 year storm**

**** Balance between meeting standards, reducing impacts on the environment and adjacent properties.**

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Construction Alternatives Considered

- A. Alternative 1 – No Build (Null Option)
- B. Alternative 2 – Rehabilitation
- C. Alternative 3 – Bridge Replacement with longer span structure requiring closure of the bridge during replacement

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Alternative 1 – No Build (Null Option)

- Provides only for continued maintenance of bridge.
- No Federal or State funding can be used for repairs.
- Deterioration will continue at the same or accelerated rate.
- Yellow and Red flags will become more numerous as deterioration continues.
- Existing substandard channel hydraulics will remain.
- Eventual load posting and/or closure of the structure.

This option does not meet project objectives and therefore has been eliminated from further evaluation.

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Alternative 2 – Rehabilitation

- Extensive repair work to the existing super and substructure required.
- Structure will remain substandard for load carrying capacity.
- Channel hydraulics would not be improved.
- Continued maintenance needs would be required by City forces (Aging infrastructure).
- Existing roadway geometry, section, pedestrian and bicycle access accommodations, drainage features would remain.

This option does not meet project objectives and therefore has been eliminated from further evaluation.

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Alternative 3 – Bridge Replacement

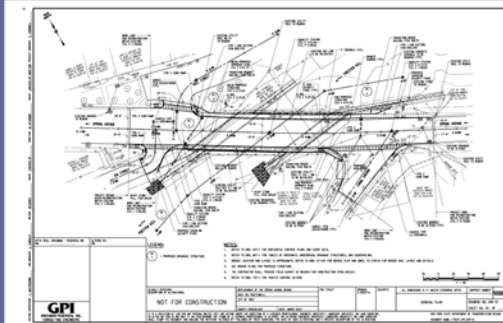
- Complete replacement of bridge with one of two options:
 - Steel Girder
 - Concrete I Beam
- Existing Masonry Walls (Historic) to remain in place
- Detour during construction approximately 4 minutes - 1 mile in length
- Proposed bridge span at 145' on new abutments behind existing masonry walls.
- ROW (PE) will need to be obtained along existing masonry walls for maintenance.
- ROW (FEE) will need to be acquired at intersection of Canal and Spring to accommodate intersection turning radius.

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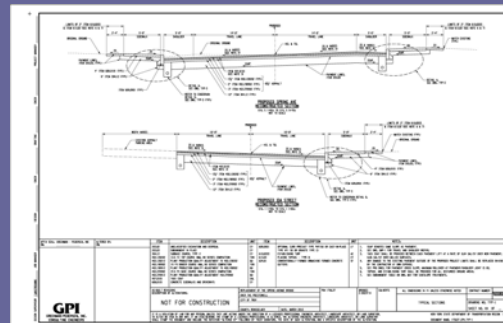
Alternative 3 – Bridge Replacement

- Geometry** – The existing geometry of the site will be maintained with minor improvements to Stopping Sight Distance and intersection turning movements.
- Operational** – traffic to be detoured off site.
- Control of Access** – remaining the same as existing.
- Right-of-Way** – (3) PE takings from private owners will be required along with (1) FEE acquisition for the Canal/Spring intersections. Additionally, several TE may be required to accommodate construction activities.
- Environmental** – minimal stream work will be performed as the existing substructure will remain in place. Any impacts will be coordinated with NYSDEC/ACOE. Impacts to cultural significant objects or areas have been avoided to the maximum extent possible. The bridge superstructure is not classified as historic, however the masonry walls are and will remain as part of this project.
- Utilities** – Relocation of several utility poles, underground telephone, waterline, and gas line. Utility coordination is ongoing and any utility work that can be relocated prior to the start of construction will be performed.

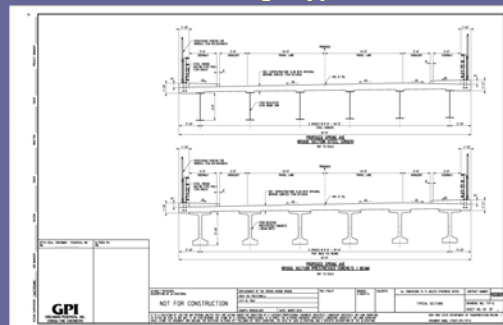
Replacement of Spring Avenue Bridge
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Alternative 3 – Overall Plan



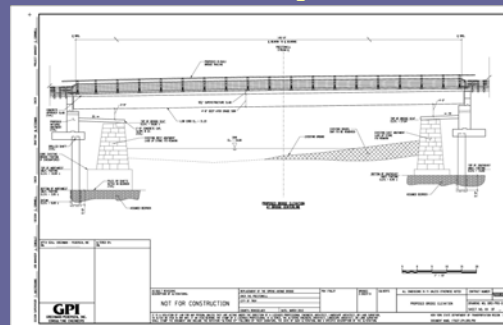
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Alternative 3 – Highway Typical Section



Replacement of Spring Avenue Bridge
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Alternative 3 – Bridge Typical Section



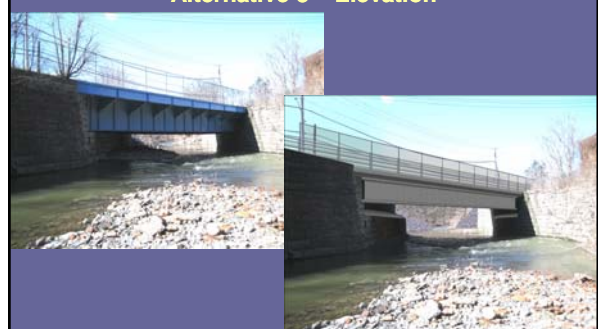
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Alternative 3 – Bridge Elevation



Replacement of Spring Avenue Bridge
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Alternative 3 – Section



Replacement of Spring Avenue Bridge
over the Poesten Kill
Alternative 3 – Elevation





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Environmental Coordination

- FHWA
 - National Environmental Policy Act (NEPA)
- NYSDEC
 - State Environmental Quality Review Act (SEQRA)
- Army Corps of Engineers (ACOE)
- NYS Historic Preservation Office (SHPO)
 - Cultural Resources
- Hazardous Materials
- Federal listed endangered species
- Surface Waters

All of the above require coordination and approval from respective permitting agencies prior to design approval.

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Right-of-Way Needs

- ROW acquisition has been identified and private owners which are impacted have been notified.
- In order to comply with federal regulations (Uniform Act), a ROW Consultant will be working with the affected property owners. Their work will include:
 - Preliminary inspection of property
 - Preparing title abstracts
 - Preparing appraisal maps
 - Appraisal of properties to Negotiate Fair Market Value
 - Complete negotiations and transfer of property



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Project Funding

- The currently programmed project costs are as follows:

▪ \$ 273,400	Design (Phases I – VI)
▪ \$ 90,000	ROW Incidentals & Acquisitions
▪ \$ 1,939,000	Construction
▪ \$ 226,000	Construction Inspection
▪ \$2,528,400	TOTAL
- Project funding shares are as follows:

▪ 80%	Federal Highway Administration
▪ 15%	New York State Department of Transportation
▪ 5%	City of Troy

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FUTURE PROJECT ACTION

- Incorporate public input into design
- Select preferred alternative
- Continue obtaining input from State/Federal and other involved agencies
- Finalize environmental review
- Prepare and submit Design Approval Documentation.
- Finalize preliminary design plans
- Finalize easements / R.O.W. needs, as necessary

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ANTICIPATED PROJECT SCHEDULE

- | | |
|-----------------------|------------------|
| ▪ Draft Design Report | March 2012 |
| ▪ Final Design Report | April 2012 |
| ▪ Design Approval | May 2012 |
| ▪ ROW acquisition | Summer/Fall 2012 |
| ▪ Final Plans | October 2012 |
| ▪ Bidding | December 2012 |
| ▪ Construction | Begin May 2013 |

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Please take this time to
ask us any questions